

Translation

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY
(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference 1446 WO	FOR FURTHER ACTION See Form PCT/IPEA/416	
International application No. PCT/BE2004/000106	International filing date (day/month/year) 20.07.2004	Priority date (day/month/year) 22.07.2003
International Patent Classification (IPC) or national classification and IPC B22D41/38		
Applicant VESUVIUS GROUP S.A.		

1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.

2. This REPORT consists of a total of 4 sheets, including this cover sheet.

3. This report is also accompanied by ANNEXES, comprising:

a. ☒ (sent to the applicant and to the International Bureau) a total of 8 sheets, as follows:

☐ sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).

☐ sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.

b. ☐ (sent to the International Bureau only) a total of (indicate type and number of electronic carrier(s)) _____, containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).

4. This report contains indications relating to the following items:

<input checked="" type="checkbox"/>	Box No. I	Basis of the report
<input type="checkbox"/>	Box No. II	Priority
<input type="checkbox"/>	Box No. III	Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
<input type="checkbox"/>	Box No. IV	Lack of unity of invention
<input checked="" type="checkbox"/>	Box No. V	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
<input type="checkbox"/>	Box No. VI	Certain documents cited
<input type="checkbox"/>	Box No. VII	Certain defects in the international application
<input type="checkbox"/>	Box No. VIII	Certain observations on the international application

Date of submission of the demand	Date of completion of this report
Name and mailing address of the IPEA/EP	Authorized officer
Facsimile No.	Telephone No.

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/BE2004/000106

Box No. I Basis of the report

1. With regard to the language, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ This report is based on translations from the original language into the following language _____, which is the language of a translation furnished for the purposes of:

- ☐ international search (Rule 12.3 and 23.1(b))
☐ publication of the international application (Rule 12.4)
☐ international preliminary examination (Rule 55.2 and/or 55.3)

2. With regard to the elements of the international application, this report is based on (*replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report*):

☐ the international application as originally filed/furnished

☒ the description:

pages 1 as originally filed/furnished

pages* 2-7 received by this Authority on 31.12.2004 with letter of 08.12.2004

pages* _____ received by this Authority on _____

☒ the claims:

nos. _____ as originally filed/furnished

nos.* _____ as amended (together with any statement) under Article 19

nos.* 1-11 received by this Authority on 31.12.2004 with letter of 08.12.2004

nos.* _____ received by this Authority on _____

☒ the drawings:

sheets 1/2-2/2 as originally filed/furnished

sheets* _____ received by this Authority on _____

sheets* _____ received by this Authority on _____

☐ a sequence listing and/or any related table(s) – see Supplemental Box Relating to Sequence Listing.

3. ☐ The amendments have resulted in the cancellation of:

☐ the description, pages _____

☐ the claims, nos. _____

☐ the drawings, sheets/figs _____

☐ the sequence listing (*specify*): _____

☐ any table(s) related to sequence listing (*specify*): _____

4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).

☐ the description, pages _____

☐ the claims, nos. _____

☐ the drawings, sheets/figs _____

☐ the sequence listing (*specify*): _____

☐ any table(s) related to sequence listing (*specify*): _____

* If item 4 applies, some or all of those sheets may be marked "superseded."

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/BE2004/000106

Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims	<u>1-11</u>	YES
	Claims	<u></u>	NO
Inventive step (IS)	Claims	<u>1-11</u>	YES
	Claims	<u></u>	NO
Industrial applicability (IA)	Claims	<u>1-11</u>	YES
	Claims	<u></u>	NO

2. Citations and explanations (Rule 70.7)

Reference is made to the following documents:

D1: Patent Abstracts of Japan vol. 2003, no. 11,
5 November 2003 (2003-11-05) -& JP 2003 181625
A (DAISHIN Kako kk), 2 July 2003 (2003-07-02);

D2: US-A-4 583 717 (NAKAMURA MASAHIRO et al.)
22 April 1986 (1986-04-22);

D3: US-A-4 355 787 (HANNES HEINZ D et al.)
26 October 1982 (1982-10-26).

Document D1, which is considered to be the prior art closest to the subject matter of claim 1, describes (the references between parentheses apply to said document):

a method for measuring the degree of wear of a refractory plate in a slide seal for controlling the flow of liquid metal when casting same from an upper vessel into a lower vessel. One parameter of the degree of plate wear is determined directly by means of a specific instrument (figure 1).

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/BE2004/000106

Box No. V

Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability;
citations and explanations supporting such statement

It is implicit that this measurement is performed in order to decide whether the used plate should be discarded or used again.

The subject matter of claims 1 and 11, respectively, differs from this prior art in that a set of parameters is used, not just a single parameter of the degree of plate wear, as determined directly by means of a specific instrument.

Said set of parameters includes at least one parameter that is routinely measured during casting (for example, the weight of metal in the container, as indicated on page 3 of the description) and at least one parameter specific to the plate per se (for example, the constriction rate as indicated on page 3 of the description).

It is plausible that the integration of these two types of parameter will allow for more accurate decision-making and thereby prevent, for example, unworn plates from being erroneously discarded or, on the other hand, prevent plates that have been used with large amounts of metal but in which the instrument for evaluating the degree of wear is faulty from being retained in service.

None of the cited documents discloses the method as per claim 1 or the apparatus as per claim 11, nor are said method and device obvious therefrom.